

NEW RECORDS OF THE SPECIES OF  
*GLYPHOCRANGON* IN THE NORTHEASTERN  
PACIFIC OCEAN (CARIDEA: GLYPHOCRANGONIDAE)

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*Abstract.*—Four species of *Glyphocrangon* are recorded from the northeastern Pacific. *Glyphocrangon spinulosa* and *G. vicaria* are reported for the first time from southern California. *Glyphocrangon sicaria* has been found off Punta Guiones, Costa Rica. Illustrations and a key are provided for the species.

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Members of the genus *Glyphocrangon* are benthic bathyal shrimps. Although the four species in the northeastern Pacific Ocean were described by Faxon (1893, 1896) and included in a review of the family Glyphocrangonidae by De Man (1921), none have been reported previously from California or the outer coast of Baja California, Mexico. *Glyphocrangon vicaria* has not been illustrated, although Faxon (*op. cit.*) described it in detail.

Recent collections made by the R.V. *Agassiz*, *Melville*, *Oconostota*, and *Spencer F. Baird* of Scripps Institution of Oceanography and the R.V. *Velero IV* of the Allan Hancock Foundation included *G. sicaria*, *G. spinulosa*, and *G. vicaria*. Material of *G. alata* taken by the R.V. *SNP-1* was donated to the Allan Hancock Foundation. Examination of these specimens has revealed extensions of the ranges and has allowed comparison of *G. vicaria* with other species.

A key to the species of *Glyphocrangon* in the northeastern Pacific Ocean is provided. I follow the names proposed by Holthuis (1971) for the spines and carinae. Measurements are in mm.

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*Glyphocrangon alata* Faxon 1893

## Fig. 1A, B, C

*Glyphocrangon alata* Faxon, 1893:201; 137–138, pl. 37.—De Man, 1921:214.—Bahamonde, 1963:4.—del Solar, 1972:10.

*Previous records*.—Off Acapulco, Mexico (16°33'N, 99°53'W), 219 m, brown sand, 11 March 1891, *Albatross* sta. 3418. Gulf of Panama (7°31'N, 78°39'W), 1350 m, rocky bottom, 11 April 1891, *Albatross* sta. 3395 (Faxon, 1895). Vicinity of Valparaiso, Chile, 600 m (Bahamonde, 1963). Off Ecuador (3°47'S, 81°12'W), 650 m, 17 March 1971, R.V. *Wiracocha*. 7°26'S, 80°46'W, 839 m; 10°51'S, 78°30'W, 680 m; 18°19'S, 71°12'W, 810 m; 1970–1972, ship *SNP-1* (del Solar, 1972).

*Material examined*.—PERU: Between Lobos de Tierra and Lobos de Afuera (6°42'S, 80°59'W), 800 m, 22 January 1974, SNP1-24, 2 specimens. Near Lobos de Afuera (7°7'S, 80°46'W), 1200 m, 20 January 1974, SNP1-13, 1 specimen. 55 mi. S of Lobos de Afuera (7°44'S, 80°30'W), 750–760 m, 23 January 1974, SNP1-28, 11 specimens, 4 ovigerous. 50 mi. SE of Lobos de Afuera (7°46'S, 80°31'W), 800 m, beam trawl, 23 January 1974, SNP1-27, 11 specimens, 1 ovigerous.

*Size distribution*.—Largest individual: Total length (tip of rostrum to tip of telson), 102; rostrum, 17; carapace, 31; abdomen without telson, 50, telson broken. Smallest individual: total length, 39; rostrum, 7; carapace, 10; abdomen, 15; telson, 7.

*Number of eggs per female*.—28–51.

*Remarks*.—No other specimens than those reported by Faxon (1895) have been reported from the northeastern Pacific Ocean.

*Glyphocrangon sicaria* Faxon 1893

## Fig. 2A, B

*Glyphocrangon sicaria* Faxon, 1893:202–203;—1895:144–146, pl. 39.—De Man, 1921:215.

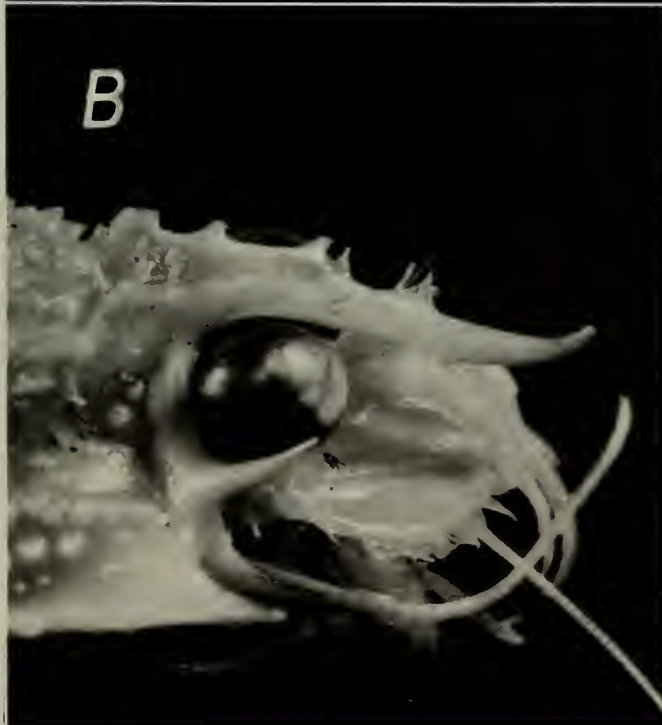
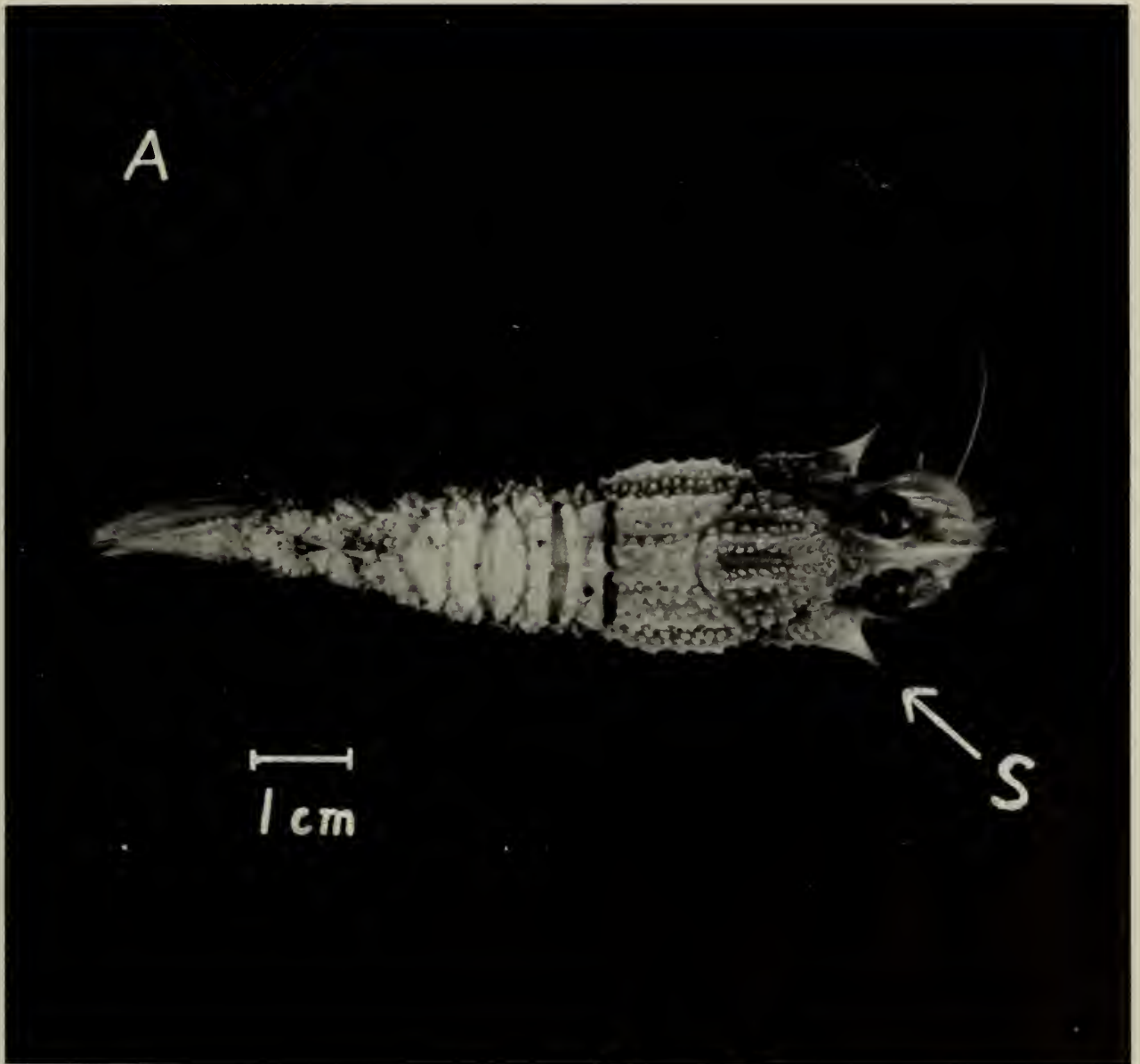
*Previous record*.—Gulf of Panama (6°21'N, 80°41'W), 3310 m, green mud, 7 March 1891, *Albatross* sta. 3382 (Faxon, 1895).

*Material examined*.—South of Punta Guiones, Costa Rica (9°35'N, 85°41'W), 1454 m, 10-foot Isaacs-Kidd midwater trawl, 20 April 1973, R.V. *Agassiz*, 1 specimen.

*Size*.—Total length, 31; rostrum, 8; carapace, 8; abdomen, 10; telson, 5.

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Fig. 1. *Glyphocrangon alata*. Female, total length 88 mm. South of Lobos de Afuera, Peru. A, Dorsal view; B, Lateral view of front; C, Dorsal view of front. S indicates prominent spine.





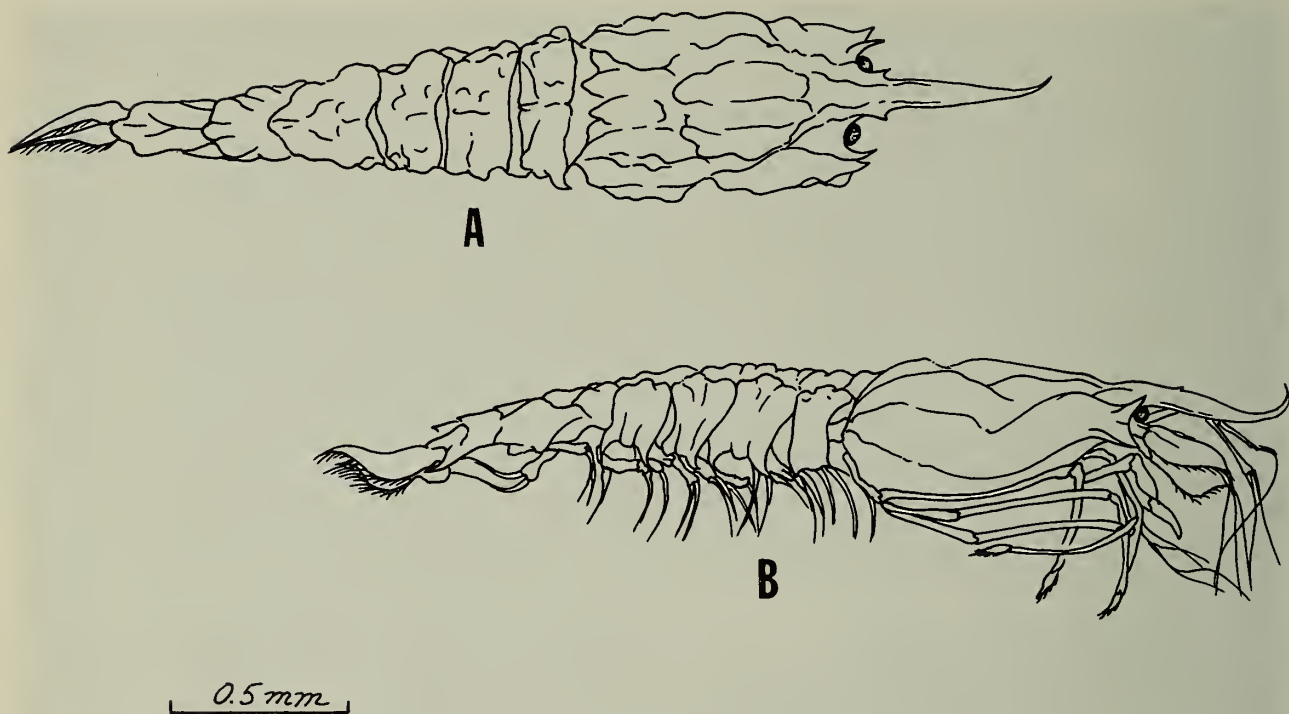


Fig. 2. *Glyphocrangon sicaria*. Juvenile, total length 31 mm. South of Punta Guiones, Costa Rica. A, Dorsal view; B, Lateral view.

*Glyphocrangon spinulosa* Faxon 1893

Fig. 3A, B

*Glyphocrangon spinulosa* Faxon, 1893:202; 1895:138–140, pl. 38.—De Man, 1921:215.

*Previous records*.—Gulf of California (26°48'N, 110°45'W), 1586 m, brown mud, 22 April 1891, *Albatross* sta. 3435. Near Las Tres Marias Islands (21°15'N, 106°23'W), 1248 m, gray sand, 18 April 1891, *Albatross* sta. 3424. Off Acapulco (16°34'N, 100°3'W), 1374 m, green mud, 11 April 1891, *Albatross* sta. 3419. Off Acapulco (16°33'N, 99°53'W), 1218 m, sand, 11 April 1891, *Albatross* sta. 3418. Off Mariato Point (7°7'N, 80°34'W), 1283 m, green mud, 23 February 1891, *Albatross* sta. 3353 (Faxon, 1895).

*Material examined*.—Cortez Basin (32°32'N, 118°53'W to 32°33'N, 118°54'W), 1298 m, 25-foot otter trawl, 6 May 1975, R.V. *Agassiz* sta. B175-2, 1 specimen. Cabo San Lucas Canyon, Baja California, Mexico; 1097 m, rock dredge, January 1957, *Spencer F. Baird* cruise dredge sta. 2, 1 specimen. Also 12 specimens from 5 other stations from the Gulf of California, Mexico; to Costa Rica, 1157–1875 m, 1967–1973.

*Size distribution*.—Largest individual: Total length, 110; rostrum, 17; carapace, 31; abdomen, 43; telson, 17. Smallest individual: total length, 53; rostrum, 11; carapace, 13; abdomen, 19; telson, 10.

*Number of eggs per female*.—11–16.

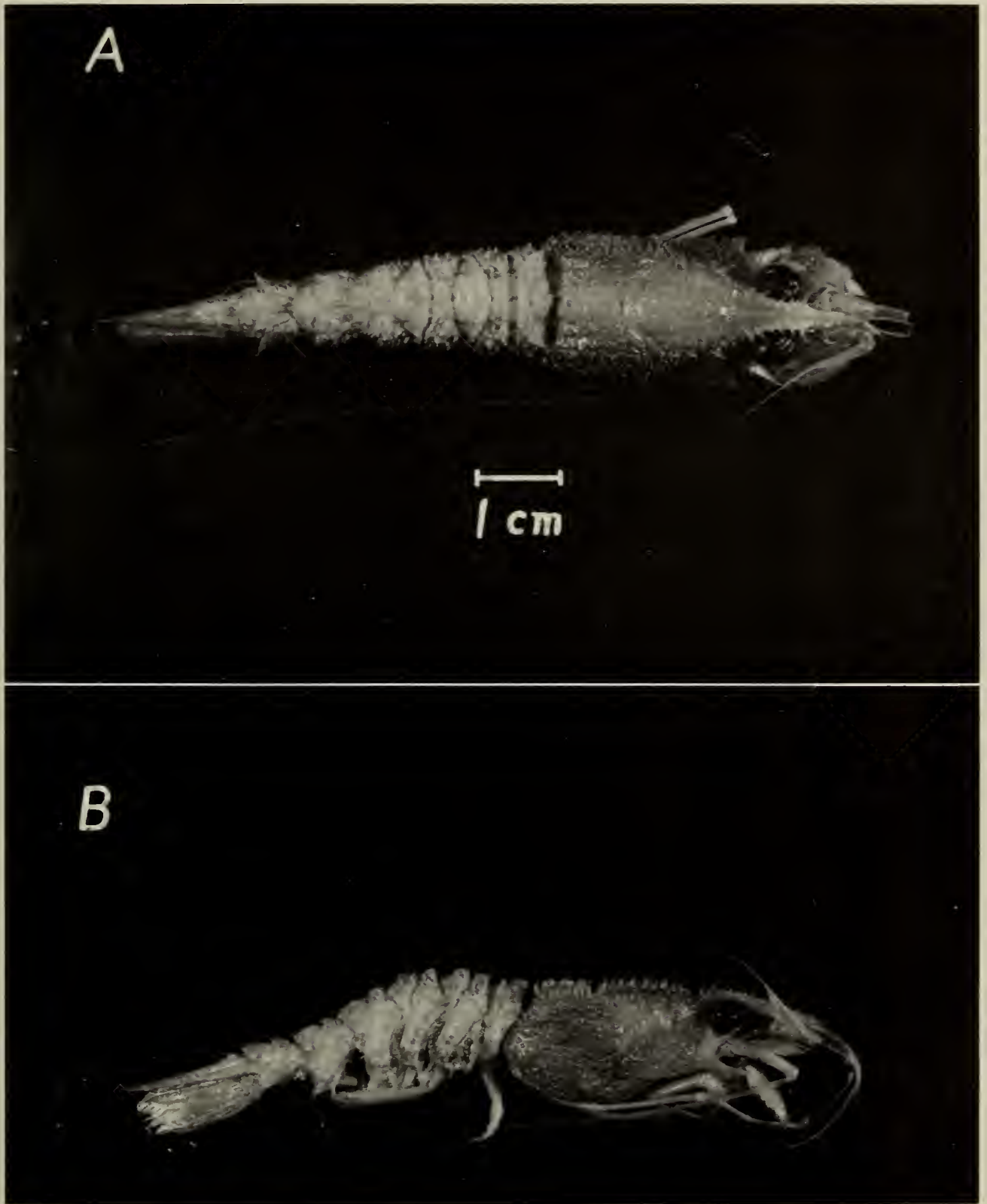


Fig. 3. *Glyphocrangon spinulosa*. Female, total length 95 mm. 14 miles from Punta Guiones, Costa Rica. A, Dorsal view; B, Lateral view.

*Glyphocrangon vicaria* Faxon 1896

Fig. 4A, B

*Glyphocrangon nobilis* A. Milne Edwards?: Faxon, 1895:142-144.

*Glyphocrangon vicaria* Faxon, 1896:159.—De Man, 1921:215.

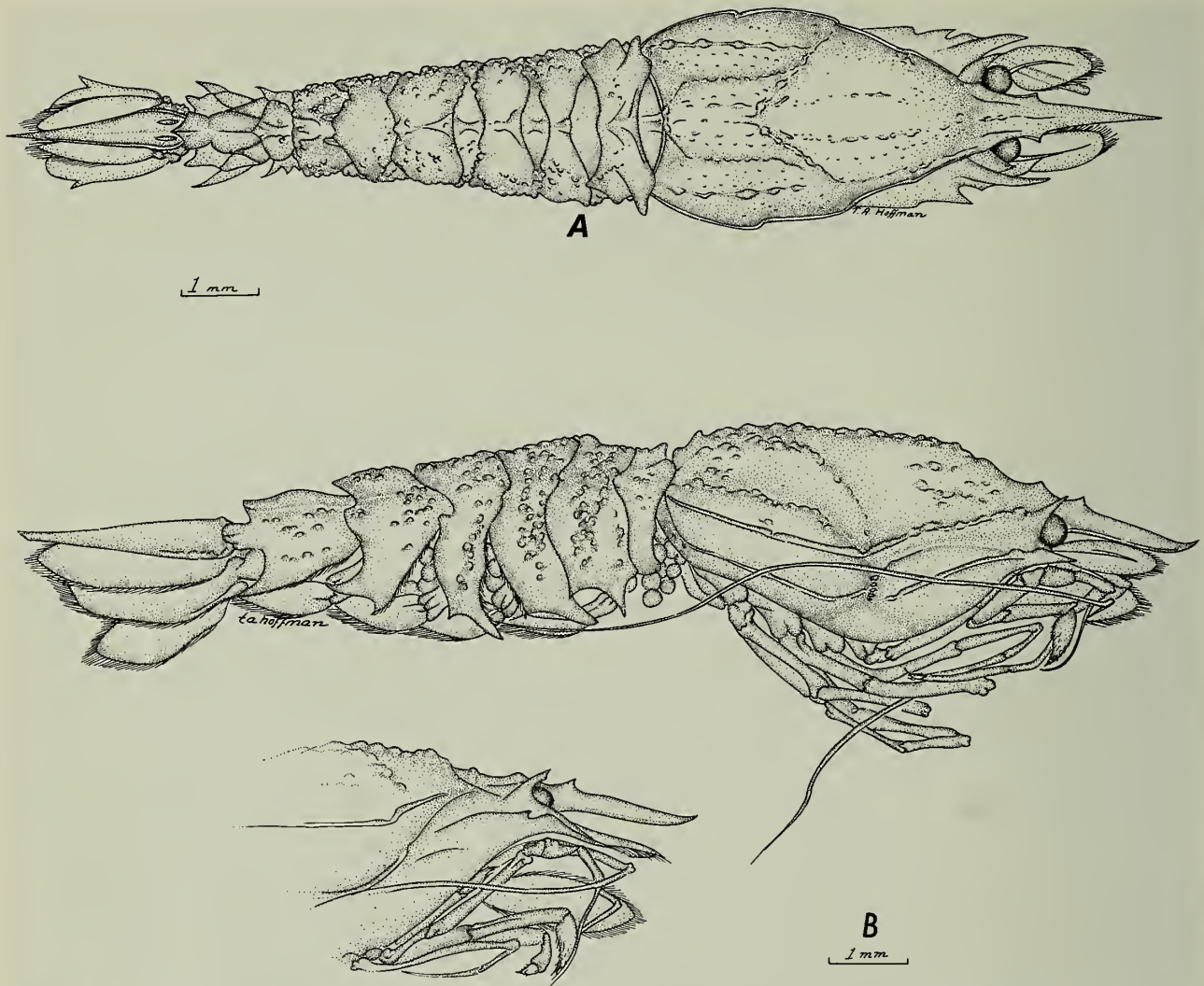


Fig. 4. *Glyphocrangon vicaria*. Female, total length 160 mm. Off Baja California, Mexico. A, Dorsal view; B, Lateral view.

*Previous records*.—11 stations, from the Gulf of California ( $23^{\circ}59'N$ ,  $108^{\circ}40'W$ ) to between Galera Point and the Galapagos Islands ( $0^{\circ}36'N$ ,  $86^{\circ}47'W$ ), 1374–2441 m, February–April 1891, R.V. *Albatross* (Faxon, 1895).

*Material examined*.—SAN CLEMENTE BASIN, CALIFORNIA:  $32^{\circ}35'N$ ,  $118^{\circ}14'W$ , 1628–1838 m, 25-foot otter trawl, 12 August 1971, R.V. *Agassiz* sta. B171-34, 10 specimens, 6 ovigerous.  $32^{\circ}28'N$ ,  $118^{\circ}7'W$  to  $32^{\circ}29'N$ ,  $118^{\circ}6'W$ , 1829 m, 25-foot otter trawl, 5 May 1975, R.V. *Agassiz* sta. B175-1, 12 specimens, 3 ovigerous.  $32^{\circ}29'N$ ,  $118^{\circ}8'W$ , 1792–1866 m, 40-foot otter trawl, 16 September 1971, R.V. *Agassiz* sta. B171-37, 45 specimens, 8 ovigerous and 2 with parasitic isopods (*Munidion* sp.).  $32^{\circ}28'N$ ,  $117^{\circ}52'W$ , 1527–1545 m, 16-foot otter trawl, 5 September 1974, R.V. *Oconostota* sta. B174-30, 1 specimen.  $32^{\circ}27'N$ ,  $117^{\circ}56'W$  to  $32^{\circ}34'N$ ,  $118^{\circ}8'W$ , 938 m, Isaacs-Kidd midwater trawl, 26 January 1977, R.V. *Velero IV* sta. 25654, 5 specimens.  $32^{\circ}26'N$ ,  $117^{\circ}49'W$  to  $32^{\circ}29'N$ ,  $117^{\circ}58'W$ , 1750 m, 25-



foot otter trawl, 27 July 1973, R.V. *Agassiz* sta. B173-63, 1 ovigerous female.

SAN DIEGO TROUGH, CALIFORNIA: 32°33'N, 118°6'W, 1829 m, 40-foot otter trawl, 3 November 1971, R.V. *Agassiz* sta. B171-40, 1 specimen. 32°29'N, 117°31'W, 1225–1244 m, 40-foot otter trawl, 14 September 1971, R.V. *Agassiz* sta. B171-36, 1 specimen.

BAJA CALIFORNIA, MEXICO: Abyssal plain (31°24'N, 120°12'W), 3880 m, 25-foot otter trawl, 21 March 1970, R.V. *Melville* sta. B170-38, 1 ovigerous female.

In addition, the following specimens were examined: 50 from 10 additional stations taken from off the west coast of Baja California, Mexico; 3 taken by the R.V. *Albatross* at station 3413 (between the Galapagos Islands and Acapulco, 2°34'N, 92°6'W); and 2 from off Punta Guiones, Costa Rica (R.V. *Velero IV* sta. 18932).

*Size distribution.*—Largest individual: Total length, 157; rostrum, 26; carapace, 43; abdomen, 65; telson, 23. Smallest individual: total length, 28; rostrum, 6; carapace, 7; abdomen, 10; telson, 5.

*Number of eggs per female.*—10–29.

*Remarks.*—In his comments on this species, Faxon (1895) mentioned that the animal closely resembled the Atlantic species *G. nobilis* A. Milne-Edwards 1881 and *G. longirostris* (Smith 1882). However, *G. vicaria* has a notch posterior to the anterior spine of the anterior sublateral carina, which the two Atlantic species lack. The spines and other sculpturing of the carapace and abdomen of *G. vicaria* are much more prominent than in *G. nobilis*. The corrugation of the rostrum of *G. vicaria* is weaker than in *G. longirostris*. As seen from the dorsal aspect, the branchiostegal spine of *G. vicaria* is exposed rather than partly obscured by the antennal spine as in *G. nobilis* and *G. longirostris*.

The specimens of *G. vicaria* that were examined agree well with the description given by Faxon (1895, 1896) and the specimens from *Albatross* station 3413. The corrugation of the rostrum is difficult to see, being represented in some individuals by a series of feathery lines along the dorsal midrib. The rostrum is more lanceolate in smaller individuals than in large ones. The hepatic tubercle on the antennal carina of the carapace and the tubercles of the submedian and intermediate carinae may be eroded in older animals instead of being sharply spiniform, but the sculpturing is observable readily on careful examination.

Taken with *G. vicaria* at *Velero IV* stations 13770 and 18932 were benthic decapods including galatheid anomurans (*Munidopsis diomedae* [Faxon 1895] and *Munidopsis verrilli* Benedict 1902), hermit crabs (*Parapagurus pilosimanus benedicti* de Saint Laurent 1972), pandalid shrimp (*Heterocarpus hostilis* Faxon 1893) and broken back shrimp (*Lebbeus washingtonianus*

[Rathbun 1902]). Like *G. vicaria*, these animals probably inhabit soft substrates.

#### KEY TO THE NORTHEASTERN PACIFIC SPECIES OF *GLYPHOCRANGON*

1. Anterior lateral carina of carapace ending in prominent anterior spine between antennal and branchiostegal spines . . . . . *G. alata*
- Anterior lateral carina of carapace not ending in prominent anterior spine between antennal and branchiostegal spines . . . . . 2
2. Rostrum with 6–7 teeth, carapace covered with dense spinules . . . . . *G. spinulosa*
- Rostrum with 2 pairs of spines, carapace with spines or tubercles instead of spinules . . . . . 3
3. Two hepatic tubercles. Rostrum with 2 pairs of spines, second of them obsolete, without corrugation . . . . . *G. sicaria*
- One hepatic tubercle. Rostrum with 2 well-developed spines, with corrugation . . . . . *G. vicaria*

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